

## **ABSTRACT**

Tubular baseball bats comprised of an elongated handle portion and a striking or barrel portion wherein the barrel portion has variable stiffness along its length. One such bat has a circumferential low cost, low weight stiffener generally located in the sweetspot area designed to increase radial stiffness in a controlled manner which results in decreasing the bat performance to meet a changed bat performance standard and can be applied at low cost to both used field returned bats and bats being newly manufactured. Further, new tubular polymer composite bats can be designed with increased radial stiffness generally located in the sweetspot area or with radial stiffness graduated from highest, generally in the sweetspot area, to lowest at the barrel ends. All bats of the present invention result in calculated bat performance to meet applicable regulatory standards while also increasing the sweetspot size.